

## **Program Evaluation Report**

### **Truckee Meadows Regional Stormwater Program (NPDES Permit No. NVS000001)**

#### **Executive Summary**

Tetra Tech, Inc., with assistance from U.S. EPA Region 9 and the Nevada Division of Environmental Protection (NDEP), conducted a program evaluation of the Truckee Meadows Regional Stormwater Program in January 2002. The purpose of the program evaluation was to determine the copermitees' compliance with the National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Discharge Permit and to evaluate the current implementation status of the program with respect to EPA's stormwater regulations. Although the facilities of all four copermitees were visited, the evaluation focused primarily on the overall program coordination and guidance provided by the Truckee Meadows Interlocal Stormwater Committee (TMISC), the newly adopted Truckee Meadows Regional Stormwater Quality Management Program (RSQMP) document, and implementation in the cities of Reno and Sparks. Evaluations of Washoe County and the Nevada Department of Transportation (NDOT) were limited in scope.

This program evaluation report discusses only program deficiencies and positive attributes. This report is not a formal finding of violation. Program deficiencies are areas of significant concern for successful program implementation. Program deficiencies may, in some cases, represent permit violations. Positive attributes are indications of a copermitee's overall progress in implementing a multifaceted program to address stormwater discharges.

The following program deficiencies are considered the most significant:

- The RSQMP does not include measurable goals necessary in order to track program implementation.
- Implementation deadlines in the RSQMP document extend beyond the permit's expiration date and are unnecessarily extended for some program areas.
- Industrial inspections conducted by the copermitees do not include all applicable facilities.
- The City of Reno and Washoe County are generally not requiring or inspecting erosion and sediment controls on construction sites.
- Additional stormwater controls are needed at the NDOT and City of Reno maintenance yards, both of which are located near the Truckee River, to prevent stormwater contamination.

Several elements of the copermittees' programs were particularly notable:

- The existing committee structure provides a solid basis for program development and implementation.
- Water quality modeling and monitoring efforts on the Truckee River will provide the copermittees with ambient data and a clear focus for the program.
- Sparks is creating a stormwater utility to fund program implementation costs.
- The Sparks Community Development Department is aggressively moving forward to include and standardize stormwater quality controls in residential development projects.

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## **1.0 Introduction**

### **1.1 Program Evaluation Purpose**

The purpose of the program evaluation was to determine the copermittees' compliance with NPDES Permit No. NVS000001 and to evaluate the current implementation status of the program with respect to EPA's stormwater regulations. Secondary goals included the following:

- Evaluate the adequacy of the Truckee Meadows RSQMP document as a guide for program implementation.
- Identify and document positive elements of the program that could benefit other Phase I and Phase II municipalities.
- Acquire data to assist in reissuance of the permit.

40 CFR 122.41(i) and Part II.B.1 of the NPDES permit provide the authority to conduct the program evaluation.

The TMISC serves as the program steering committee, providing overall program coordination and guidance to the four copermittees—the cities of Reno and Sparks, Washoe County, and NDOT. The on-site evaluation focused primarily on the program coordination and guidance provided by the TMISC and on implementation in the cities of Reno and Sparks. The evaluation of Washoe County and NDOT was limited in scope, consisting of one afternoon. The adequacy of the RSQMP document as a guide for the overall program was evaluated separately after the on-site activities were completed.

### **1.2 Permit History**

The NPDES permit was issued on January 14, 2000, and is scheduled to expire on January 14, 2005. The permit required development of the RSQMP document, which was released in December 2001. This is the second NPDES permit issued to the copermittees under the stormwater Phase I regulations. The first permit, issued in July 1990 before the Phase I regulations were finalized, was administratively extended by NDEP until the current permit was issued. Development of a formalized stormwater management plan was not a condition of the previous permit.

### **1.3 Logistics and Program Evaluation Preparation**

Before initiating the on-site program evaluation, Tetra Tech, Inc., reviewed available program materials. The two goals of the file review were to gain greater knowledge of the existing program, permit requirements, and past activities, as well as to prepare for on-site activities. The following materials were reviewed:

- NPDES Permit No. NVS000001
- RSQMP document (dated December 2001)
- Annual Report for Year ending December 31, 2001 (dated January 11, 2002)
- Twenty-Four-Month Update Report (dated September 30, 1992)
- Thirty-Six-Month Update Report (dated September 1993)

- TMISC and copermittee web sites
- File correspondence with the copermittees and the permitting authority

On January 28–31, 2002, Tetra Tech, Inc., with assistance from U.S. EPA Region 9 and NDEP, conducted the program evaluation. The evaluation schedule was as follows:

<b>Monday, January 28</b>	<b>Tuesday, January 29</b>	<b>Wednesday, January 30</b>	<b>Thursday, January 31</b>
<i>All Parties</i> – Program evaluation kickoff. Program management, annual reporting, financial reporting, stormwater discharge monitoring, and measuring progress.	<i>Sparks</i> – Land use planning, construction site discharge, structural controls, illicit discharge detection and elimination, and industrial program.  <i>Reno</i> – Land use planning, construction site discharge, structural controls, illicit discharge detection and elimination, and industrial program.	<i>Sparks</i> – Municipal operations.  <i>Reno</i> – Municipal operations.  <i>Washoe County</i> – Land use planning, construction site discharge, structural controls, illicit discharge detection and elimination, industrial program, and municipal operations.  <i>NDOT</i> – Land use planning, construction site discharge, structural controls, and municipal operations.	<i>All Parties</i> – Exit interview and presentation of preliminary findings.  <i>Post-evaluation</i> – Detailed review of the RSQMP document and latest annual report.

Upon completion of the evaluation, an exit interview was held with the TMISC and copermittees to discuss the preliminary findings. During the exit interview, the parties were informed that the findings were to be considered preliminary pending further review by EPA and NDEP.

#### **1.4 Program Areas Evaluated**

The following program areas were evaluated:

- TMISC program management
- Municipal operations
- Land use planning
- Structural controls
- Construction site discharge
- Illicit discharge detection and elimination
- Industrial program

### **1.5 Program Areas Not Evaluated**

The following areas were not evaluated in detail as part of the program evaluation:

- Public outreach.
- Monitoring program details (e.g., sample location, types, frequency, parameters, etc.).
- Other NPDES permits issued to the copermitees (e.g., industrial or construction NPDES stormwater permits).
- Legal authority. (EPA and NDEP had reviewed the legal authority when the permit was initially issued.)
- Inspection reports, plan review reports, and other relevant files. The program evaluation team did not conduct a detailed file review to verify that all elements of the programs were being implemented as described. Rather, observations by the evaluation team and statements from the copermitees' representatives were used to assess overall compliance with permit requirements. A detailed file review of specific program areas could be included in a subsequent evaluation.

### **1.6 Areas Recommended for Evaluation**

The evaluation team recommends the following additional areas of the program for further evaluation:

- A more intensive review of the current and future stormwater controls and practices of Washoe County and NDOT.
- A review of monitoring results and plans for addressing identified pollutants of concern.
- An assessment of dry-weather flows in the Truckee Meadows urbanized areas that discharge to the Truckee River. The assessment would serve as a follow-up to past surveys conducted by the permittees in the early 1990s.
- A review of the accelerated implementation schedules for each program element once the schedules have been modified.

## **2.0 Program Evaluation Results**

Evaluation results for the TMISC, RSQMP, and each copermitee are presented in the following subsections, organized by program area (as defined in the RSQMP).

This program evaluation report discusses only program deficiencies and positive attributes. This report is not a formal finding of violation. Program deficiencies are areas of significant concern for successful program implementation. Program deficiencies may, in some cases, represent permit violations. Positive attributes are indications of a copermitee's overall progress in

implementing a multifaceted program to address stormwater discharges. The evaluation team identified only positive attributes that were innovative (i.e., beyond minimum requirements). Some areas were found to be simply adequate; that is, not particularly deficient or innovative.

As indicated in Section 1.0, the evaluation team did not evaluate all components of the copermittee's program. Therefore, the copermittees should not consider the enclosed list of program deficiencies, or the program evaluation report itself, as a comprehensive evaluation of individual program elements.

A pre-evaluation review of the RSQMP indicated that the document lacked the detail needed to assess the following: (1) the current stormwater controls and practices employed by each copermittee, (2) future program specifics that will ultimately define what will be required of the copermittees, and (3) specific deadlines for program implementation. Therefore, the evaluation team was unable to use the RSQMP as a measure of copermittee compliance. The evaluation also did not attempt to compare the current level of implementation with the schedules provided in the RSQMP because many of the deadlines were 2 to 5 years in the future and some extended past the permit's expiration date. Rather, the evaluation team reviewed the current stormwater controls and practices of each copermittee against the NPDES Permit, EPA stormwater requirements, and commonly accepted stormwater practices in other Phase I municipal separate storm sewer system (MS4) programs.

The most significant program deficiencies and positive attributes identified during the evaluation are listed in the Executive Summary and are identified below with text boxes.

## **2.1 Truckee Meadows Interlocal Stormwater Committee and RSQMP**

The evaluation identified both deficiencies and positive attributes, which have been grouped below under the major headings of the RSQMP.

### **2.1.1 Evaluation of Program Development and Implementation**

#### Deficiencies Noted:

- *The RSQMP does not acknowledge many of the existing activities currently undertaken by the copermittees .*

The RSQMP does not accurately reflect many of the existing copermittee activities. For example, under municipal operations (MO), the RSQMP describes a database that each local jurisdiction will develop to track information on maintenance activities such as catch basin cleaning, street sweeping, and ditch cleaning. The RSQMP does not reflect the fact that a database has already been developed and is being used by the copermittees. In addition to the database, the RSQMP does not reflect the fact that the cities of Reno and Sparks set specific goals each year for the number of maintenance activities to be performed. The RSQMP should reflect these existing activities and goals and, where not present, establish them so as to provide specific direction to each of the copermittees.

- *The RSQMP does not include measurable goals necessary in order to track program implementation.*

The RSQMP needs to include more specific “measurable goals” or equivalent performance criteria for each program component. Although the RSQMP includes “goals” for the individual components implementing the nine program elements, most of these goals do not quantify how much needs to be done or by when. Including measurable goals in the program document or in the permit will provide a mechanism for both the copermitees and NDEP to evaluate progress in implementing the program. The following are examples of measurable goals included in other stormwater programs:

- Performance Criteria (Ventura Countywide Stormwater Quality Management Program): “Identify staff whose job activities involve development planning; train 90% of employees in targeted positions by January 27, 2001 and annually thereafter. The training shall include coverage of SQUIMP requirements.”
- Performance Standard (Alameda Countywide Clean Water Program):
  - “1. Each agency will inspect construction sites for adequacy of stormwater quality control measures on a regular basis, with the frequency of inspections based on considerations such as the size of the project, its potential impact on stormwater quality, and the amount of construction activity.
  - “2. For construction sites requiring erosion and sediment control plans, each agency will inspect sites prior to the beginning of the wet season each year, to ensure that measures have been taken to prevent erosion and minimize discharges of sediment from disturbed areas.
  - “3. Inspectors will review the SWPPP, if available, prior to conducting the inspection.
  - “4. During the inspection, inspectors will . . . .”
- Permit Requirement (Anchorage, Alaska, Phase I MS4 permit): “Permittees shall conduct a visual inspection of all major outfalls during dry weather periods in years two (2) and five (5) of this Permit term. Permittees shall submit an inspection plan, listing the outfalls and inspections criteria, to the Regional Administrator for review and approval within 90 days of the effective date of this Permit. Permittees shall submit documentation regarding protocols and parameters of the field screening as part of the first annual report required by Part IV.G. of this Permit.”

Additional guidance on developing measurable goals can be found on EPA’s web site at <http://www.epa.gov/npdes/stormwater/measurablegoals/index.htm>.



- *Most operational staff were not aware of the specifics contained in the RSQMP.*  
The TMISC and the copermittees need to involve the operational staff from applicable departments in the development of the stormwater program. Most operational staff interviewed as part of the evaluation were not involved in developing the plan and were not aware of its contents. Applicable departments and staff, some of which are already implementing programs that meet stormwater permit requirements, should be consulted in the development of the program.

## **2.1.2 Evaluation of Program Management, Monitoring, and Reporting**

### Positive Attributes:

- *The existing committee structure provides a solid basis for program development and implementation.*

The TMISC structure provides an excellent vehicle for developing the program as well as for sharing expertise and resources. Each of the copermittees brings strengths to the committee that should be utilized for the benefit of the other copermittees (such as the land use planning program for the City of Sparks and the industrial inspection program in Reno and Sparks.) The TMISC should consider expanding the committee structure to include subcommittees focused on one or more program elements. The subcommittee process would ensure that knowledgeable staff from applicable departments are included in the decision-making process and that attainable goals are established.

- *Water quality modeling and monitoring efforts on the Truckee River will provide the copermittees with ambient data and a clear focus for the program.*

The Truckee Meadows MS4 program is unique in that the majority of stormwater discharges ultimately flow to a single water body, the Truckee River. Past and ongoing water quality modeling, monitoring, and Total Maximum Daily Load (TMDL) activities for the river provide valuable data for goal setting and best management practice (BMP) development. The TMISC plans to focus the program to specifically protect this resource by reducing loadings of the primary pollutants of concern. Land use characterization monitoring planned for 2002 will further help the program refine the focus of specific program elements.

### Deficiencies Noted:

- *The program goal of achieving consistency among copermittees with respect to implementation of program elements might limit program development.*  
Although the move towards regional standardization of stormwater controls and practices is commendable, the goal of achieving consistency with program requirements among the four copermittees could be limiting the development of the program and unnecessarily extending the implementation timelines. For example, databases used to track municipal maintenance activities, industrial inspections, or locations of structural controls within the copermittees do not need to be identical as long as the information can be compared between copermittees. Likewise, activities such as developing policies and procedures, training programs, manual revisions,

storm drain maps, and ordinance revisions do not need to be identical, nor do these activities need to occur simultaneously, for effective program implementation.

In many cases, the individual copermittees are progressing with these activities at different rates, which could hinder future efforts to achieve regional consistency. The RSQMP should establish measurable goals and consistent regional reporting requirements while also recognizing the variability of work practices and operational differences among the copermittees.

- *The annual report does not adequately document program results.*  
The evaluation team understands that the 2001 annual report was submitted in conjunction with the RSQMP and that the 2000 annual report was submitted while the RSQMP was still being developed. Future annual reports, however, need to address the annual report requirements in Part I.B.8 of the permit and include an evaluation and assessment of the individual program elements and the program as a whole. For example, instead of listing notices and incidents for the cities, the report should analyze and summarize this information to determine whether trends exist or existing programs need to be modified. Once measurable goals are set for the program, the annual report should document the copermittees' success in achieving those measurable goals.

### **2.1.3 Evaluation of Program Schedule and Budget**

#### Deficiency Noted:

- *Implementation deadlines in the RSQMP extend beyond the permit's expiration date and are unnecessarily extended for some program areas.*

The existing NPDES permit expires on January 14, 2005, while the program schedule in the RSQMP extends significantly beyond that date. For example, the RSQMP schedule indicates that program implementation for the illicit discharge and industrial programs will begin in 2006/7. This schedule does not take into account the fact that some of the copermittees are already implementing significant portions of the industrial program. Given that the copermittees have been covered by a stormwater NPDES permit since 1990, and are now more than 2 years into this permit cycle, a realistic schedule should be set to implement the program by the permit expiration date to the maximum extent practicable. The RSQMP should be revised to ensure timely implementation of all program elements.

### **2.1.4 Program Evaluation**

#### Deficiency Noted:

- *The program needs to clearly identify additional measurable goals.*  
Other than improved water quality (which is very difficult to demonstrate), the TMISC was unable to clearly identify measurable goals for the program during the evaluation. The RSQMP also fails to identify how the program will be deemed to be successful. To ensure continued support for the program and to provide a means to

measure its effectiveness, the TMISC should establish additional measurable goals for each program element.

These measurable goals should be linked programmatic, social, or environmental indicators such as those listed in the 1996 Center for Watershed Protection report *Environmental Indicators to Assess Stormwater Control Programs and Practices*. For example, the City of Phoenix tracks various programmatic indicators such as the numbers of public outreach events, catch basins cleaned, and complaint investigations. Phoenix also monitors social indicators such as the public's knowledge of stormwater issues for use as other measures of success.

In another example, the Sacramento Stormwater Management Program (Sacramento Program) uses a variety of special studies, evaluation of performance measures, subwatershed studies, statistical analysis, modeling, and/or environmental indicators to assess the effectiveness of its program. Specifically, the Sacramento Program has identified performance and/or effectiveness measures for each program element BMP and sub-element task. For example, Sacramento County tracks the number of warnings, corrective actions, penalties, and stop work orders issued as a performance measure and uses the number of illegal non-stormwater discharges reported as an effectiveness measure. The City of Sacramento set minimum performance standards for each BMP including, for example, a standard to visit 20 classrooms each year to conduct stormwater presentations.

## **2.2 City of Reno**

Reno, with a population of approximately 180,000 people, is the largest city in Washoe County and the second-largest city in Nevada. Significant growth is occurring in this community and industrial, commercial, and residential construction is widespread. The industrial and commercial base is also significant.

The following program elements were reviewed in the city of Reno, with deficiencies and positive attributes noted.

### **2.2.1 Evaluation of Program Management** Adequate.

### **2.2.2 Evaluation of Municipal Operations** Positive Attribute:

- *Reno's Public Works Maintenance Department has a well-established storm sewer maintenance program with clear schedules, goals, and a sophisticated database to track activities.*

The Public Works Maintenance Department has a comprehensive program in place to ensure proper maintenance of the storm drain system. The program includes cleaning catch basins at least twice a year, street sweeping on an 8-week schedule, and collecting road sand within 4 days of a snow event. The Department tracks completion of each activity, noting the resources expended. The schedules and goals

set by the Public Works Maintenance Department could be a model for inclusion in the RSQMP.

Deficiency Noted:

- *The Public Works Maintenance yard needs stormwater controls for its sand/salt storage area.*

While the Public Works Maintenance yard is primarily an enclosed facility, the sand/salt storage area in the yard is not covered or bermed. Runoff controls for this storage area should be implemented to prevent untreated sheet flow runoff from discharging to the Truckee River, which is about 150 feet beyond the yard.

**2.2.3 Evaluation of Land Use Planning**

Deficiencies Noted:

- *The Community Development Department does not generally require erosion and sediment controls on construction sites.*

The City's Community Development Department generally does not require erosion and sediment controls on construction sites. Stormwater is generally not considered in the plan review process, except for revegetation of slopes after the project has been completed. The Department also was not aware of the draft Construction Activities Handbook developed during the previous permit term. Appendix 6 to the City's Thirty Six Month Update Report (Sept. 1993) submitted under the previous permit describes a construction site stormwater management program for sites 1-5 acres. Although the City's program will need to address all construction disturbing at least one acre, at a minimum, the City is encouraged to review this previously developed document as it begins to implement this program. The TMISC should review EPA regulations addressing development planning found at 40 CFR 122.26(d)(2)(iv)(A)(2) and develop a program to address these requirements as soon as possible.

- *The Community Development Department still requires installation of Sur-Traps, knowing that the maintenance staff removes them to facilitate the cleaning of catch basins.*

The Community Development Department requires some private developers to install Sur-Traps in catch basins but acknowledges that most of these devices are removed during catch basin cleaning and not replaced. The Community Development Department and the Public Works Maintenance Department should agree on a standard that both departments can effectively implement.

#### 2.2.4 Evaluation of Structural Controls

Adequate.

#### 2.2.5 Evaluation of Construction Site Discharge

Deficiency Noted:

- *The City is not conducting inspections of erosion and sediment controls at construction sites.*

In Reno, private inspectors are hired by the project developers to conduct construction inspections during development. Although the City oversees this process, the private inspectors are not required to review the adequacy of erosion and sediment controls. At the time of the evaluation, the City did not have an established program to inspect construction sites for erosion and sediment controls. EPA regulations requiring Phase I MS4s to develop and implement a program to address stormwater runoff from construction sites can be found at 40 CFR 122.26(d)(2)(iv)(D).

#### 2.2.6 Evaluation of Illicit Discharge Detection and Elimination

Positive Attribute:

- *The Comprehensive Emergency Response/Reporting Protocol ensures the appropriate personnel are called for various emergencies.*  
Each year, Reno's Public Works Department publishes an Emergency Response/Reporting Protocol that lists specific phone numbers and individuals to be called for various emergencies. This protocol functions to eliminate confusion regarding who should be contacted and helps ensure a fast and appropriate response. Specific stormwater emergencies covered in the protocol are described as "material discharged into storm drain" and "storm drain plugged."

Deficiency Noted:

- *Other than spill response, the City does not have a program to proactively detect illicit discharges.*  
The City needs to begin implementing some of the activities described in the RSQMP to detect illicit discharges, such as component IDDE-1. In addition, dry weather discharges also should be investigated to determine if these could be illicit discharges. EPA regulations require that a Phase I MS4 address more than spill response in its illicit discharge program (40 CFR 122.26(d)(2)(iv)(B)). For example, field screening, investigative procedures, and public awareness are all key components of the EPA regulations.

### 2.2.7 Evaluation of Industrial Program

#### Positive Attribute:

- *Experienced pretreatment inspectors include stormwater evaluations in their pretreatment inspections.*  
The City has an experienced and well-trained staff of pretreatment inspectors who also include stormwater evaluations in their inspection of pretreatment facilities. This process provides a solid basis for eventually expanding the program to include other facilities outside the pretreatment program.

#### Deficiency Noted:

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|---|
| <ul style="list-style-type: none"><li>• <i>Industrial inspections do not include all applicable facilities.</i><br/>Phase I MS4s are required to control pollutants in stormwater discharges from certain applicable industrial facilities (see 40 CFR 122.26(d)(2)(iv)(C)). The City has yet to expand the universe of applicable facilities and has been inspecting only facilities subject to industrial pretreatment regulations. The RSQMP establishes an implementation date of 2006/7; however, as described previously in 2.1.3 and based on the City's current implementation status, program implementation should be significantly accelerated. In addition to adding more facilities, the program would need to be modified to train inspectors in how to determine the adequacy of Stormwater Pollution Prevention Plans (SWPPPs). The City (or the TMISC) will need to work with NDEP to clearly define the added program responsibilities.</li></ul> |
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## 2.3 City of Sparks

Sparks, which has a population of about 65,000 people, is the fifth-largest city in Nevada. The city is immediately northeast of Reno and occupies about 22 square miles. Significant growth is occurring in this community, and industrial, commercial and residential construction is widespread. The industrial and commercial base is significant.

The following program elements were reviewed in the city of Sparks, with deficiencies and positive attributes noted.

### 2.3.1 Evaluation of Program Management

#### Positive Attribute:

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|--|
| <ul style="list-style-type: none"><li>• <i>Sparks is creating a stormwater utility to fund program implementation costs.</i><br/>The City's Public Works Department is aggressively developing a stormwater utility as a mechanism to fund program implementation. The City plans to establish the utility in 2003 and is currently assessing the need for and magnitude of future operational and capital improvement projects. The results of the assessment will determine the rate schedule, which will be assessed as a stormwater equivalent unit. The creation of the stormwater utility will provide a dedicated operating budget for program implementation and a clear representation of program expenditures.</li></ul> |
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Deficiency Noted:

- *Increased interdepartmental communication is needed for complete program implementation.*  
Sparks needs to increase its interdepartmental communication to ensure that all elements of the program are fully implemented. This coordination might include periodic intra-city meetings as well as staff participation in yet-to-be-developed RSQMP subcommittees. It appears that some individual city departments are moving forward with the development and implementation of stormwater controls practices without detailed knowledge of the RSQMP or the activities of other city departments.

### **2.3.2 Evaluation of Municipal Operations**

Positive Attribute:

- *Municipal maintenance operations are well established and generally comply with anticipated RSQMP requirements.*  
The Public Works Maintenance Services Department has a comprehensive program in place to ensure proper maintenance of the storm drain system. This program includes scheduled catch basin cleaning, a drop inlet maintenance and replacement program, and a street sweeping program that complies with the new Washoe County requirements. A Maintenance Management System database is used for planning and resource tracking purposes. These activities provide a solid basis for complete program implementation.

Within the context of other MS4 municipal operations programs, the City should improve the city-sponsored construction site inspection process to mirror the private process (see 2.3.5), explore the standardization of stormwater BMPs for emergency and non-emergency infrastructure repair or replacement, and institute an employee-training program. These activities could occur independently of the RSQMP as long as they conform to RSQMP minimum requirements.

### **2.3.3 Evaluation of Land Use Planning**

Positive Attributes:

- *The Community Development Department is aggressively moving forward to include and standardize stormwater quality controls in residential development projects.*

The Community Development Department has been including stormwater quality controls as a condition of approval for residential subdivision projects for several years. This process will be formalized in 2002 with adoption of two new citywide design manuals—a Hydrologic Criteria and Drainage Design Manual, scheduled for adoption in July 2002, and a Public Works Design Manual, scheduled for adoption in November 2002. The manuals will establish minimum design requirements for site drainage, inclusion of stormwater quality controls, and infrastructure sizing and specifications. Upon adoption of the design manuals, the existing municipal ordinance will be revised to reference the manuals. The program

evaluation did not determine how, or whether, this process is applied to commercial and industrial development. The inclusion and standardization of stormwater quality controls could serve as a model for the other copermitees.

Note that these activities closely resemble the program requirements in LU-1 and LU-2 but were not initiated as part of the RSQMP. Community Development staff also were not aware of the special studies (LU-5) program component of the RSQMP. The City's independent development of standards highlights the need for increased staff participation in the development of the RSQMP.

- *The Development Services User Group (DSUG) ensures development community input and acceptance of stormwater controls for new development.*  
DSUG was established to provide a forum among the local development community and the City's planners and plan review staff. Activities such as the creation and adoption of the design manuals mentioned previously are discussed in these meetings, and the local development community is encouraged to participate in the decision-making process. DSUG has proven to be an effective public outreach mechanism, resulting in the early adoption of and compliance with new design criteria.

#### **2.3.4 Evaluation of Structural Controls**

##### Deficiency Noted:

- *Improved interdepartmental communication is needed regarding the selection, approval, and maintenance of structural controls.*  
Community Development has included a variety of structural controls in residential, commercial, and industrial projects throughout Sparks. Often the exact location, ownership status, and maintenance requirements of these controls are not well communicated to Public Works Maintenance Services. As a result, considerable time is often spent responding to calls placed by the public and/or developers regarding the ownership and maintenance responsibility of these controls. The City should work to improve interdepartmental communication regarding the selection, approval, and maintenance of structural controls and continue to expand on activities like the geographic information system (GIS) mapping project, which will delineate the locations and ownership of structural controls.

#### **2.3.5 Evaluation of Construction Site Discharge**

##### Deficiencies Noted:

- *The City needs to establish a process to ensure that stormwater controls are adequately implemented at both city-sponsored and private construction sites.*  
The program evaluation identified differences between the erosion and sediment controls required for city-sponsored construction projects and those required for private construction projects. Although both the Community Development and Public Works Departments require contractors/developers to submit an NOI and obtain coverage under the State Construction General Stormwater Permit before starting work, it is unclear whether the Public Works inspectors require or evaluate



the effectiveness of stormwater controls on-site. Community Development routinely requires the submission of erosion and sediment controls for private construction projects and inspects these sites to ensure proposed BMPs are adequately installed and maintained. Public Works does not specifically require contractors to prepare erosion and sediment control plans or equivalent stormwater management plans as part of the job specification package for city-sponsored projects. The City should address this discrepancy to ensure that appropriate stormwater controls are implemented at all construction projects.

- *Training on erosion and sediment controls and on general stormwater awareness should be provided to construction inspectors.*

None of the City's construction inspection staff have received formalized training regarding general stormwater awareness or on the selection, installation, and maintenance of temporary erosion and sediment controls or permanent water quality controls. Given the relatively small number of construction inspectors, Sparks should aggressively move forward with the development and implementation of a training program.

### **2.3.6 Evaluation of Illicit Discharge Detection and Elimination**

#### Positive Attribute:

- *Spill response and illicit discharge investigations appear well coordinated.*  
The Environmental Control Section's spill response and illicit discharge investigation procedures are well coordinated and thorough. A dedicated spill response vehicle is available at all times, field staff are well trained and have access to equipment, and the Section has a history of successfully tracking down and eliminating illicit discharges. A detailed enforcement response plan is available and communication within city departments and with other local and regional agencies appears to be well established.

#### Deficiency Noted:

- *The City has not conducted a comprehensive outfall survey in more than 5 years.*  
The Environmental Control Section should consider conducting a complete survey of the City's storm drain outfalls at least once every 5 years. The survey could be conducted along Steamboat Creek, the North Truckee Drain, and the Truckee River. This could help in identifying illicit discharges and dry weather flows and would provide additional quality assurance for the new GIS map.

### **2.3.7 Evaluation of Industrial Program**

#### Positive Attribute:

- *The Environmental Control Section is well prepared to initiate the industrial inspection program.*  
The Environmental Control Section has been evaluating the adequacy of stormwater controls at industrial sites as part of its industrial pretreatment inspection program.

Staff indicated that the existing pretreatment program database is suitable for tracking stormwater inspections and any required modifications could be easily incorporated. This process provides a solid basis for potentially expanding the program to include other facilities outside the pretreatment program.

Deficiency Noted:

- *Industrial inspections do not include all applicable facilities.*

Phase I MS4s are required to control pollutants in stormwater discharges from certain applicable industrial facilities (see 40 CFR 122.26(d)(2)(iv)(C)). The City has yet to expand the universe of applicable facilities and has been inspecting only facilities subject to the industrial pretreatment regulations. Although the RSQMP establishes an implementation date of 2006/7, as described previously in 2.1.3 and based on the City's current implementation status, program implementation should be significantly accelerated. In addition to expanding the universe of facilities, the program would need to be modified to train inspectors in how to determine the adequacy of SWPPPs. The City (or the TMISC) will need to work with NDEP to clearly define the added program responsibilities.

## **2.4 Washoe County**

Washoe County is along the eastern slopes of the Sierra Mountains in western Nevada. The County covers an area of 6,600 square miles and has a population of 340,000. The major cities in the County are Reno, Sparks, and Incline Village, at Lake Tahoe. Only the urbanized area surrounding the cities of Reno and Sparks are covered by the NPDES permit.

In comparison to Reno or Sparks, the evaluation of Washoe County was limited, consisting of only a half-day review. This review included a meeting with County staff and a site visit to one construction site. The following program elements were reviewed in Washoe County, with positive attributes and deficiencies noted.

### **2.4.1 Evaluation of Program Management**

Positive Attribute:

- *The comprehensive Truckee River Flood Control Project could provide additional information and direction to water quality programs*  
The County is currently developing an alternative to a Corps of Engineers flood control project for the Truckee River. This alternative incorporates natural buffers, stream bank improvements, and temperature management. The County should work to integrate the RSQMP requirements with the flood control alternative to ensure that water quality protection is maximized for both projects.

## 2.4.2 Evaluation of Municipal Operations

### Deficiencies Noted:

- *Street sweeping and catch basin cleaning crews discharge water collected in the storm drain system back into the system untreated.*  
During the evaluation, it was determined via the interview process that County maintenance staff discharge collected water from catch basin cleaning back into the storm drain system untreated. Water collected during street cleaning operations is also discharged to the storm drain system untreated. In both instances, the collected solids and trash are disposed of at the landfill. Since the evaluation was conducted, the County has stopped this practice, and now discharges this water to the sanitary sewer.
- *Most maintenance is performed on an on-call basis; there is no set schedule for major activities such as street sweeping or catch basin cleaning.*  
Unlike the two cities, the County does not schedule regular maintenance or set goals for the amount of maintenance that must be performed. Conducting maintenance only on an on-call basis could allow some facilities to discharge excess pollutants, become clogged, or fail in extreme events.

## 2.4.3 Evaluation of Land Use Planning

### Deficiency Noted:

- *Plan reviewers do not use technical guidance to condition projects with stormwater controls.*  
The evaluation team reviewed the plan documents for one project. The plan listed a BMP for storm drain inlet protection that recommended that contractors weigh the hay bales down using sandbags or soil. The site visit determined that the contractor, following the plan, had dumped soil onto the hay bales and the covered inlet, defeating the original purpose of the hay bales. The County needs clear standards for erosion and sediment controls on construction sites and needs to establish plan review procedures to ensure that approved plans contain those standards. Employee training programs regarding appropriate sediment and erosion controls also are warranted. Phase I MS4 regulations that address development planning are provided at 40 CFR 122.26(d)(2)(iv)(A)(2).

## 2.4.4 Evaluation of Structural Controls

### Not evaluated.

## 2.4.5 Evaluation of Construction Site Discharge

### Deficiency Noted:

- *Most construction sites are not inspected for compliance with erosion and sediment controls.*

The County does not regularly inspect construction sites for compliance with erosion and sediment controls. As described in 2.4.3, lack of adequate erosion and sediment

standards in plans often correlates with otherwise preventable discharges in the field. The large (approximately 20-acre) construction site visited by the evaluation team did not have any erosion and sediment controls in place other than the storm drain inlet protection discussed earlier (which was designed improperly). The County needs to institute a program to inspect these sites and ensure compliance. EPA regulations requiring Phase I MS4s to develop and implement a program to address stormwater runoff from construction sites can be found at 40 CFR 122.26(d)(2)(iv)(D).

#### **2.4.6 Evaluation of Illicit Discharge Detection and Elimination**

##### Positive Attribute:

- *District Health has a comprehensive system in place to respond to any spills or emergency situations.*

District Health is the primary emergency responder for most spill response events in Washoe County and the two cities. The District has a comprehensive program in place, including household hazardous waste collection, recycling, and public education. Permitted food facilities inspected by District Health are required to implement some stormwater controls, such as enclosing garbage areas that drain to the sanitary sewer.

##### Deficiency Noted:

- *Other than activities by District Health there is no proactive program to detect and remove illicit discharges.*

The County needs to begin implementing some of the other activities described in the RSQMP to detect illicit discharges. In particular, activity IDDE-1 on inspecting areas for illicit connections and discharges should be implemented. Dry weather discharges also should be investigated for any illicit discharges. EPA regulations require that a Phase I MS4 address more than spill response in its illicit discharge program (40 CFR 122.26(d)(2)(iv)(B)). For example, field screening, investigative procedures, and public awareness are all key components in EPA's regulations.

#### **2.4.7 Evaluation of Industrial Program**

##### Not Evaluated.

#### **2.5 Nevada Department of Transportation**

NDOT District 2 operations are widespread throughout northwest Nevada and include the design, construction, operation, and maintenance of roads, highways, and interstates and the operation of maintenance yards. There is only one maintenance yard in the Truckee Meadows area, and it is located half in Reno and half in Sparks. The program evaluation was limited in scope, and only representatives from the NDOT's Maintenance Section were interviewed. Although the maintenance yard was inspected, no construction site visit was performed because NDOT representatives indicated that there were no ongoing construction projects in the Truckee Meadows area at the time of the program evaluation.

The following program elements were reviewed for NDOT, with positive attributes and deficiencies noted.

### 2.5.1 Evaluation of Program Management

#### Deficiency Noted:

- *NDOT maintenance staff were not aware of the specifics contained in the RSQMP.*  
At the time of the evaluation, the representatives had not reviewed the RSQMP and were generally unaware of its contents and requirements. However, District 2 maintains the roads and highways in the Sierra Mountains surrounding Lake Tahoe, and the Maintenance Section representatives indicated that they are very accustomed to the stormwater controls and practices required by the Lake Tahoe (California) MS4 program and the Tahoe Regional Planning Agency.

### 2.5.2 Evaluation of Municipal Operations

#### Positive Attribute:

- *A database is being utilized to track municipal operations.*  
The District uses a Maintenance Management System database for planning and resource tracking. The database is likely suitable for the data collection and reporting requirements envisioned in the RSQMP.

#### Deficiencies Noted:

- *Additional stormwater controls are needed at the maintenance yard to prevent stormwater contamination.*

The brine storage area and the salt/sand storage area were two significant sources of stormwater contamination observed in the maintenance yard. The brine storage and dispensing area lacks secondary containment, spill containment equipment, or other spill or run-on BMPs. As part of a test project to reduce air pollution, NDOT has been producing a brine solution and applying it to roads and highways for deicing. The brine production occurs indoors in a maintenance garage, and the housekeeping of this facility appeared adequate. The brine solution is stored outside in two large tanks (exact capacity undetermined) and is dispensed to NDOT trucks with a 2-inch-diameter hose. An unprotected storm drain inlet is located approximately 100 yards to the east (near the entrance gate). Facility representatives indicated that the storm drain discharges directly to the Truckee River, which is just south of the maintenance yard. At the time of the evaluation, snowmelt water was flowing from the dispensing area to the drain inlet.

NDOT also operates a salt and sand mixing, storage, and dispensing area in this yard. Individual piles of salt, sand, and mixed salt/sand are stored on a paved pad. NDOT representatives stated that sweeping of the pad area is routinely performed. Although the exact drainage patterns were not delineated during the evaluation, it was apparent that stormwater comes in contact with these materials because a considerable amount of truck and tractor drag-out was evident throughout the area. A second storm drain

inlet is located to the south of the pad, and a hay bail had been placed at its entrance. A considerable amount of sediment (mostly sand) had accumulated behind the hay bale. This drain also is believed to lead directly to the Truckee River.

The Truckee River is impaired partially because of high concentrations of total dissolved solids (TDS). Therefore, NDOT needs to rapidly evaluate its operational options and develop and implement BMPs that prevent contaminated stormwater from discharging to the Truckee River.

- *Maintenance schedules are facility-specific and generally not well defined.*  
NDOT representatives indicated that storm drain maintenance was the responsibility of the facility supervisor (i.e., roadway, section of interstate highway, etc.) and that there is no District-wide maintenance schedule. Therefore, catch basin cleaning, ditch cleaning, and other storm drain activities have typically occurred on an as-needed basis. Although District representatives indicated that the District is moving toward requiring contractors to develop a maintenance plan for each new facility that identifies recurring maintenance needs, this has not yet occurred. Street and highway sweeping schedules were not determined during the evaluation. NDOT will need to work with the TMISC to ensure conformance with RSQMP requirements.

### **2.5.3 Evaluation of Land Use Planning**

#### Adequate:

- *Erosion and sediment controls are required at construction sites greater than 5 acres.*  
For projects larger than 5 acres, NDOT requires the contractor to submit an NOI, develop and implement an SWPPP, and, in locations immediately adjacent to a water body, develop and implement a Water Pollution Control Plan. The required erosion and sediment controls are usually provided as one or more separate pages in the overall development plan. In some cases, NDOT prescribes the specific controls that the contractor must use. For projects smaller than 5 acres, a Water Pollution Control Plan is required only when activities will occur adjacent to a water body.

NDOT's criterion for the mandatory inclusion and approval of flood and/or stormwater controls was not determined during the program evaluation.

### **2.5.4 Evaluation of Structural Controls**

#### Deficiency Noted:

- *Increased interdepartmental communication is needed when approving structural controls.*  
NDOT needs to increase the interdepartmental communication among its design, construction, and maintenance groups to ensure that maintenance access is provided in the design for each structural control. In some cases, structural controls have been installed without adequate access, which has necessitated that significant adjustments be made after construction to allow for required maintenance.

NDOT's criterion for the mandatory inclusion and approval of water quality structural controls was not determined during the program evaluation.

#### **2.5.5 Evaluation of Construction Site Discharge**

##### Adequate:

- *Construction sites are routinely inspected.*  
Ensuring the adequacy of on-site erosion and sediment controls is the responsibility of the Resident Engineer, who is on-site daily. Additionally, NDOT's Water Quality Specialist, who is based in Carson City, also performs periodic site inspections. NDOT representatives stated that contractors are required to implement and maintain the erosion and sediment controls provided in NDOT's SWPPP and/or Water Pollution Control Plan. Failure to comply with these requirements may result in monetary damages.

Neither the adequacy of controls nor implementation of the program element were verified at a construction site during the evaluation.

#### **2.5.6 Evaluation of Illicit Discharge Detection and Elimination**

##### Adequate:

- *NDOT illicit discharge program is primarily focused on spill response.*  
NDOT's dispatch center routinely receives telephone calls from the public, State Patrol, or other governmental agencies regarding discarded materials left along roadways and highways in the Truckee Meadows area. NDOT field crews carry a spill response flow chart that describes required actions and procedures for notifying other emergency response agencies. NDOT representatives stated that their crews remove discarded materials or participate in clean-up activities only when the material is clearly nonhazardous; all other activities are handled by the County Health Department, State Patrol, or a private contractor summoned by either agency.

NDOT representatives stated that, with the exception of the main corporate yard, the stormwater conveyance systems incorporated into its facilities all originate on the roadways and generally discharge into open ditches, adjacent waterways, or municipal collection systems. Stormwater contributions from private residential, commercial, or industrial sites do not occur, and therefore NDOT's illicit discharge detection and elimination system consists entirely of spill control.

#### **2.5.7 Evaluation of Industrial Program**

Not Applicable. NDOT does not regulate or inspect industrial sites.